

Notice of Allowability

Application No.

10/644,864

Examiner

Fritz Alphonse

Applicant(s)

CHENG ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the RCE filed on 8/09/2007.
2. ☒ The allowed claim(s) is/are 1,4-13,16-19 and 21.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


GUY LAMARRE
PRIMARY EXAMINER

DETAILED ACTION

0.1 This Office Action is in response to the RCE filed on 8/09/2007. Claims 1, 4-13, 16-19, 21 are pending. Claims 2, 3, 14-15, 20 are canceled.

Allowable Subject Matter

1. After further search and through examination of the present application and in view of the prior art of record, claims 1, 4-13, 16-19, 21 are found to be in condition for allowance.

Reason for Allowance

The following is an examiner's statement of reasons for allowance: The present invention provides a method of erasure decoding of acknowledgement (ACK)/negative acknowledgement (NACK) feedback information.

To achieve the inventive goal, independent claim 1 identifies the distinct features "detecting a state of received ACK/NACK feedback information for associated sent data based on at least one threshold derived using an objective function, the objective function including at least a first term representing an effect on data throughput for at least one possible type of error in detecting a state of the received ACK/NACK feedback information, wherein the possible type of error is missed detection of a NACK, and the first term represents a cost of an average number of total bits to be retransmitted if a NACK is missed in detection."

Independent claim 13 identifies the distinct features "detecting a state of received ACK/NACK feedback information for associated sent data using at least one threshold derived using an objective function including a first term and a second term, each representing an effect on data throughput for at least one possible type of error in detecting a state of the received ACKINACK feedback information, wherein the possible type of error is missed detection of a

NACK, and the effect on data throughput is expressed in terms of a cost of an average number of total bits to be retransmitted if a NACK is missed in detection.”

Independent claim 18 identifies the distinct features “optimizing erasure thresholds for erasure decoding ACK/NACK feedback information based on HARQ throughput performance using an objective function including at least one term relating to throughput cost of retransmissions from at least one higher layer protocol caused by missed detection of a NACK, wherein the throughput cost of retransmissions is expressed in terms of a cost of an average number of total bits to be retransmitted if a NACK is missed in detection.”

Independent claim 19 identifies the distinct features “employing an objective function in determining at least one of an ACK, NACK and erasure, the objective function including at least one term accounting for at least an effect on data throughput in response to at least one error type, wherein the error type is missed detection of a NACK, and the effect on data throughput is expressed in terms of a cost of an average number of total bits to be retransmitted if a NACK is missed in detection.”

2. The first cited reference Moulsey (US Pub # 2003/0100268) discloses a radio communication system comprises a communication channel for the transmission of data packets. The second cited reference, Agee et al. (US Pub # 2004/0095907) discloses a method and apparatus for optimization of wireless multipoint electromagnetic communication networks.

However, the features recited in claims 1, 13, 18 and 19 in the instant application (No. 10/644,864) are neither anticipated nor rendered obvious by Moulsey and Agee et al. references nor any other prior art of record.

These limitations specifically mentioned above in conjunction with all other limitations of the base claims 1, 13, 18 and 19 would not have been obvious over, would not have been fairly suggested by the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks, Washington, D.C. 20231

or faxed to: (703) 872-9306 for all formal communications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fritz Alphonse, whose telephone number is (571) 272-3813. The examiner can normally be reached on M-F, 8:30-6:00, Alt. Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques, can be reached at (571) 272-6962.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-3824

Information regarding the status of an application may also be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Fritz Alphonse

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September 12, 2007



GUY LAMARRE
PRIMARY EXAMINER